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CHAPTER -IV

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CHAPTER - IV

Analysis And Interpretation

4.1 Introduction

The present chapter deals with the analysis of data, the discussion and interpretation of the results.

As mentioned in Chapter 3 the main variable is consisted of ten scales. They are as follows :

1. Attitude. (ATT)
2. Motivation. (MOT)
3. Time Management. (TMT)
4. Anxiety. (ANX)
5. Concentration. (CON)
6. Information Processing. (INP)
7. Selecting Main Ideas. (SMI)
8. Self Testing. (SFT)
9. Study Aids. (STA)
10. Test Strategies. (TST)

The independent variables are sex, types of school, levels of academic achievement, mother's education, father's education, mother's occupation, father's occupation, family income, types of family, co-curricular activities, tuition classes and learning orientation of the students.

The data collected were analysed in three parts. In part I, analysis of variance was used to study the main and interaction effects of sex, types of school and levels of academic

achievement on learning strategies.

In Part II, the analysis of variance is used to study the main effect of mother's education, father's education, mother's occupation, father's occupation, family income, types of family, co-curricular activities and tuition classes on learning strategies.

In Part III, the technique of correlation was used to study the relationship between students learning orientation and their learning strategies.

Part I

In this part 2 X 2 X 3 factorial design with 2 levels of sex, 2 levels of types of school and 3 levels of academic achievement was used to examine the influence on each of the ten scales of learning strategies.

4.2 Effects of Sex,Types of School,Levels of Academic Achievement on Attitude

Table 5

A 2 X 2 X 3 Factorial Design for Attitude

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	39.124	39.124	1.923	NS
Types of School	1	229.376	229.376	11.274	0.01
Levels of Aca.Ach.	2	779.661	389.831	19.160	0.01
<u>2-way interactions</u>					
Sex X types of school	1	9.101	9.101	0.447	NS
Sex X levels of Aca.Ach.	2	48.062	24.031	1.181	NS
Types of School X levels of Aca. Ach.	2	97.373	48.687	2.393	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	8.392	4.196	0.206	NS
SS Between	11	1191.914	108.356	5.326	
SS Within	888	18067.086	20.346		
Total	899				

Table 6

Number and Mean Scores on Attitude

	Number	Mean
Boys	530	13.02
Girls	370	13.04
Students of Anami Schools	450	13.53
Students of Independent Schools	450	12.54
High Achievers	300	14.04
Middle Achievers	300	13.26
Low Achievers	300	11.80

Table 7

Number and Mean Scores of High, Middle and low Academic Achievers on Attitude

	High	Middle	Low
N	300	300	300
M	14.04 (a)	13.26 (b)	11.80 (c)

In order to know the inter group mean differences, the 't' values were found out with the help of following formula.

$$\begin{aligned}
 S Ed &= \frac{MSW}{n_a} + \frac{MSW}{n_b} + \frac{MSW}{n_c} \\
 &= \frac{20.346}{300} + \frac{20.346}{300} + \frac{20.346}{300} \\
 &= 0.068 + 0.068 + 0.068 \\
 &= 0.204 = 0.45 \\
 &= 0.45
 \end{aligned}$$

With 888 df, t value at 0.05 level = 1.96 X 0.45 = 0.882
 0.01 level = 2.58 X 0.45 = 1.161

Table 7 A

Mean Differences and their Significance

a	-	b	=	14.04	-	13.26	=	0.78	NS
a	-	c	=	14.04	-	11.80	=	2.24	0.01
b	-	c	=	13.26	-	11.80	=	1.46	0.05

Table 5 shows the main and interaction effects of sex, types of school and levels of academic achievement on attitude of the students.

The F ratio of 1.923 with respect to sex is not significant. This indicates that boys and girls do not differ significantly in their attitude to learn. The null hypothesis 1 concerning no effect of sex on attitude is accepted.

The same table further shows that F ratio with respect to types of school is 11.274 which is significant beyond 0.01 level. This means that students' studying in anami group schools differ significantly from the student studying in independent schools with respect to their attitude to learn. In the light of this F value of 11.274, the null hypothesis 2 regarding no effect of types of school on attitude is not accepted.

From Table 6 it can be noticed that the mean difference between anami group schools and independent schools is in favour of anami group schools. This shows that the students of anami group schools have more favourable attitude towards

study than the students of independent schools. The anami group association of schools are formed with the main objective to strengthen the educational programs and utilize maximally human and other material resources in given conditions. The finding confirms the purpose for which such association is formed.

Further, it is observed in table 5 that the main effect of levels of academic achievement on attitude is highly significant as the value of F ratio is 19.16 which is significant beyond 0.01 level. In the light of this result the null hypothesis 3 regarding no effect of levels of academic achievement on attitude to learn is not accepted.

Table 6 shows that the means of high, middle and low achievers are 14.04, 13.26 and 11.80 respectively. The trend is in descending order from high achievers to low achievers. Table 7 A reveals the fact that the difference between the means of high and middle achievers is not significant. Whereas the mean difference between high achievers and low achievers and between middle and low achievers are significant. This shows that high achievers have more favourable attitude towards learning than low achievers. Similarly middle achievers have more favourable attitude towards learning than low achievers.

The interaction effects on sex with types of school is not significant as the F value of 0.447 is not significant.

In the light of the F value the null hypothesis 4 namely sex and types of school jointly will have no effect on attitude of students in learning, is accepted.

Similarly the interaction effects of sex and levels of academic achievement on attitude is not significant hence the null hypothesis 5 regarding no joint effect of sex and levels of academic achievement on attitude, is also accepted.

Types of school with levels of academic achievement has also no significant effect on attitude of the students towards learning. Here the null hypothesis 6 namely, the type of school and levels of academic achievement jointly will have no effect on students' attitude towards study, is accepted.

Further Table 5 reveals that the combined effect of sex, types of schools and academic achievement on students' attitude is not significant as the F Value of 0.206 is not significant. Here the null hypothesis 7 is accepted in the light of obtained F value.

Thus sex has no significant and differential role to play in attitude of the students' learning.

4.3 Effects of Sex, Types of School and Levels of Academic Achievement on Motivation

Table 8

A 2 X 2 X 3 Factorial Design for Motivation

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
Main Effects					
Sex	1	127.601	127.601	6.633	0.05
Types of School	1	35.645	35.645	1.863	NS
Levels of Aca.Ach.	2	331.412	165.706	8.613	0.01
2-way interactions					
Sex X types of school	1	0.446	0.446	0.023	NS
Sex X levels of Aca.Ach.	2	60.454	30.227	1.571	NS
Types of School X levels of Aca. Ach.	2	97.797	48.898	2.542	NS
3-way interactions					
Sex X types of school X levels of Aca.Ach	2	105.624	52.812	2.745	NS
SS Between	11	684.309	62.210		
SS Within	888	19.238			
Total	899				

Table 9

Number and Mean Scores on Motivation

	Number	Mean
Boys	530	13.74
Girls	370	13.94
Students of Anami Schools	450	14.05
Students of Independent Schools	450	13.63
High Achievers	300	14.60
Middle Achievers	300	13.56
Low Achievers	300	13.35

Table 10

Number and Mean Scores of High, Middle and Low Academic Achievers on Motivation

	High	Middle	Low
N	300	300	300
M	14.60 (a)	13.56 (b)	13.35 (c)

S Ed = 0.44

With 888 df, t value at 0.05 Level = $1.96 \times 0.44 = 0.86$

0.01 Level = $2.58 \times 0.44 = 1.13$

Table 10 A

Mean Differences and their significance

a	-	b	=	14.60	-	13.56	=	1.04	0.05
a	-	c	=	14.60	-	13.35	=	1.25	0.01
b	-	c	=	13.56	-	13.35	=	0.21	NS

The Table 8 shows the main effects, the first order (two way) interaction and the second order (three way) interaction of sex, types of school and levels of academic achievement on motivation.

The F value of main effect of sex on motivation is 6.633 which is significant at 0.05 level. This indicates that boys and girls differ significantly in their motivation to learn. The null hypothesis 8 regarding no effect of sex on students' motivation to learn is not accepted. Table 9 shows the mean scores of different groups of students. The mean difference in motivation of boys and girls is in favour of girls. This means that girls are more motivated, more diligent, more self-disciplined and more willing to work hard than the boys.

It is also observed in Table 8 that the main effect of types of school on motivation is not significant as the F value is 1.853. In the light of this result the null hypothesis 9 concerning no significant effect of types of school on students motivation is accepted. This implies that

there is no significant difference between student of anami group schools and independent schools so far as their motivation to learn is concerned.

With respect to levels of academic achievement it is observed in Table 8 that F ratio of 8.613 is significant beyond 0.01 level of confidence. In the light of this result the null hypothesis 10 is rejected.

From Table 9 it is noticed that the mean scores of high, middle and low achievers are 14.60, 13.56 and 13.35 respectively. The Table 10 A shows that the mean difference between high and middle achievers and high and low achievers are significant whereas the mean difference between middle and low achievers are not significant. This indicates that high achievers show more motivation, diligence, self discipline and willingness to work hard for study than the other two groups of students, Whereas middle and low achievers do not differ with respect to their motivation for study.

Table 8 further reveals that interaction effect of sex and types of school is not significant. Here the null hypothesis 11 which states that there will be no significant joint effect of sex and types of school on motivation is accepted.

The F ratio of interaction effect of sex and levels of academic achievement is 1.571 which is not significant; therefore the null hypothesis 12 is accepted; and it may be con-

cluded that levels of academic achievement is independent of sex so far as motivation to learn is concerned.

The combined effect of types of school and levels of academic achievement is not significant as the values of F ratio of 2.542 is not significant. In the light of the value of F ratio the null hypothesis 13 is accepted.

The joint effect of sex, types of school and levels of academic achievement on motivation is not significant. The value of F ratio is 2.745. In the light of this result, the null hypothesis 14 namely, sex, types of school and levels of academic achievement jointly will not have significant effect on motivation is accepted.

Thus types of school has no significant differential effect on motivation of students to learn.

4.4 Effects of Sex, Types of School and Levels of Academic Achievement on Time Management

Table 11

A 2 X 2 X 3 Factorial Design for Time Management

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	238.782	238.782	7.350	0.01
Types of School	1	269.761	269.761	8.303	0.01
Levels of Aca.Ach.	2	1061.368	530.684	16.335	0.01
<u>2-way interactions</u>					
Sex X types of school	1	15.678	15.678	0.483	NS
Sex X levels of Aca.Ach.	2	117.004	58.502	1.801	NS
Types of School X levels of Aca. Ach.	2	20.633	10.316	0.318	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	169.188	84.594	2.604	NS
SS Between	11	1897.795	172.527	5.310	
SS Within	888	28849.428	32.488		
Total	899				

Table - 12
Number and Mean Scores on Time Management

	Number	Mean
Boys	530	16.62
Girls	370	16.87
Students of Anami Schools	450	17.27
Students of Independent Schools	450	16.23
High Achievers	300	18.23
Middle Achievers	300	16.37
Low Achievers	300	15.63

Table - 13
Number and Mean Scores of High, Middle and Low Academic Achievers on Time Management

	High	Middle	Low
N	300	300	300
M	18.23 (a)	16.37 (b)	15.63 (c)

S Ed = 0.57

With 888 df, t value at 0.05 level = 1.96 X 0.57 = 1.12

0.01 level = 2.58 X 0.57 = 1.47

Table 13 A

Mean Differences and their Significance

a	-	b	=	18.23	-	16.37	=	1.86	0.01
a	-	c	=	18.23	-	15.63	=	2.6	0.01
b	-	c	=	16.37	-	15.63	=	0.74	NS

Table 11 shows that F ratio of 7.35 and 8.303 with respect to sex and types of school respectively are significant beyond 0.01 level. In the light of these values of F ratio the null hypotheses 15 and 16 are rejected and it can be inferred that the boys and girls differ significantly in the use of Time management techniques for study. The same can be said for anamī and independent school students.

The F ratio of 16.335 with respect to levels of academic achievement is also significant beyond 0.01 level of confidence. Keeping in mind this F value the null hypothesis 17 concerning no effect of levels of academic achievement on the use of Time management technique is not accepted.

From the mean scores in Table 12 it is clear that girls are more time management conscious than the boys. Similarly anamī group school students show consciousness in using time management technique than the independent group school students.

Table 13 A reveals that the mean differences between high and middle achievers and between high and low achievers

are significant at 0.01 level. This indicates that high achievers are more conscious in the use of time management principles for academic tasks than middle achievers and low achievers.

The first order interactions between sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement on the students' use of time management technique in learning are not significant. This means that there is no significant influence of sex and types of school combined, sex and levels of academic achievement combined and types of school and levels of academic achievement combined on the students' use of time management technique in learning. On the basis of these results null hypotheses 18, 19 and 20 are accepted. Here it can be said that sex, types of schools and levels of academic achievement are independent of one another so far as the use of time management technique is concerned.

The second order interaction shows that combined effect of sex, types of schools and levels of academic achievement on the use of time management techniques in learning is not significant, hence the hypothesis 21 is accepted.

4.5 Effects of Sex, Types of School and Levels of Academic Achievement on Anxiety.

Table 14

A 2 X 2 X 3 Factorial Design for Anxiety

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	380.445	380.445	12.353	0.01
Types of School	1	102.705	102.705	3.335	NS
Levels of Aca.Ach.	2	1557.793	778.896	25.291	0.01
<u>2-way interactions</u>					
Sex X type of school	1	137.301	137.301	4.458	0.05
Sex X levels of Aca.Ach.	2	62.211	31.106	1.010	NS
Types of School X levels of Aca. Ach.	2	63.237	31.619	1.027	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	97.322	48.661	1.580	NS
SS Between	11	2373.262	215.751	7.006	
SS Within	888	27347.601	30.797		
Total	899				

Table 15

Number and Mean Scores on Anxiety

	Number	Mean
Boys	530	16.94
Girls	370	17.21
Students of Anami Schools	450	17.30
Students of Independent Schools	450	16.55
High Achievers	300	18.36
Middle Achievers	300	17.24
Low Achievers	300	15.17

Table 16

Number and Mean Scores of High, Middle and Low Academic Achievers on Anxiety

	High	Middle	Low
N	300	300	300
M	18.36 (a)	17.24 (b)	15.17 (c)

S Ed = 0.556

With 888 df, t value at 0.05 level = $1.96 \times 0.556 = 1.09$

0.01 level = $2.58 \times 0.556 = 1.43$

Table 16 A

Mean Difference and their Significance

a	-	b	=	18.36	-	17.24	=	1.12	0.05
a	-	c	=	18.36	-	15.17	=	3.19	0.01
b	-	c	=	17.24	-	15.17	=	2.07	0.01

In order to see the inter group mean differences for the interaction effect of sex and types of school Tukey's gap test was applied. These results are presented in Table No 17.

Table 17

Interaction between sex and types of school

	Anam1 school	Independent School
Boys	N = 250	N = 280
	M = 17.22 (a)	M = 16.65 (b)
Girls	N = 200	N = 170
	M = 17.97 (c)	M = 16.45 (d)

S Ed = 0.748

With 888 df 't' at 0.05 level = 1.96 X 0.748 = 1.466

0.01 level = 2.58 X 0.748 = 1.929

Table 17 A

Mean Differences and their Significance

a	-	b	=	17.22	-	16.65	=	0.57	NS
a	-	c	=	17.22	-	17.97	=	0.75	NS
a	-	d	=	17.22	-	16.45	=	0.77	NS
b	-	c	=	16.65	-	17.97	=	1.32	NS
b	-	d	=	16.65	-	16.45	=	0.20	NS
c	-	d	=	17.97	-	16.45	=	1.52	0.05

In Table 14 it is seen that the main effect with respect to sex is highly significant as the value of F ratio is 12.353 which is significant beyond 0.01 level of confidence. This means that boys and girls differ in the degree of anxiety and worry about school performance. Keeping in mind the value of F ratio the null hypothesis 22 concerning no effect of sex on anxiety is rejected. Table 15 shows that the mean difference is in favour of girls. This means that girls are more anxious and they worry more about school performance than boys. This is also in confirmation with the earlier result that girls are more motivated, time management conscious in study than boys.

Table 14 further reveals that the F ratio of 3.335 with respect to types of school is not significant, hence the null hypothesis 23 namely types of school will have no significant effect on anxiety of the students about their school performance is accepted. This indicates that the students studying in anami group schools and students studying in independent

schools are equal with respect to their anxiety and worry about school performance.

In Table 14 it is further seen that F ratio of 25.291 with respect to levels of academic achievement is highly significant. In the light of this, null hypothesis 24 is rejected. Table 16 A reveals the fact that mean difference between high achievers and middle achievers, high achievers and low achievers and middle achievers and low achievers are significant. Hence it can be said that high, middle and low achievers differ significantly in their degree of anxiety and worry about their school performance. It can also be said that high achievers are more anxious about their school performance than middle achievers, who are also more anxious than low achievers.

The first order interaction of sex and types of school is 4.458 which is significant at 0.05 level. This means that the joint interaction of sex and types of school influence anxiety and worry of students about their school performance. Therefore the null hypothesis 25 is not accepted. Table 17 A shows inter group mean differences which were compared with 't' values of 1.466 at 0.05 level and 1.929 at 0.01 level. It was observed that the mean difference between girls from anami group schools and girls of independent schools with respect to their anxiety about school performance is significant at 0.05 level. This difference is in favour of girls from

anami group schools. This means that the girls from anami group schools are more anxious than those from independent schools about their school performance. The same table further reveals that the others inter group mean differences are not significant. Hence it can be said that the boys of anami group schools and independent schools, the boys and girls of anami group schools, and the boys of anami group schools and the girls of independent schools are equal with respect to their anxiety about the school performance.

It is further noticed in Table 14 that the interaction effects of sex and levels of academic achievement and sex and types of school are not significant as the obtained values of F are 1.01 and 1.027 respectively. In the light of these results the null hypotheses 26 and 27 are accepted.

The second order interaction effect of sex, types of school and levels of academic achievement on anxiety and worry of students regarding their school performance is also not significant. Therefore the null hypothesis 28 concerning no significant combined effect of sex, types of school and levels of academic achievement on anxiety and worry of students regarding their school performance is accepted.

4.6 Effects of Sex, Types of school and Levels of Academic Achievement on Concentration.

Table 18

A 2 X 2 X 3 Factorial Design for Concentration

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
Main Effects					
Sex	1	25.588	25.588	1.004	NS
Types of Schools	1	71.809	71.809	2.819	NS
Levels of Aca.Ach.	2	1312.536	656.268	25.761	0.01
2-way interactions					
Sex X types of schools	1	6.817	6.817	0.268	NS
Sex X levels of Aca.Ach.	2	45.913	22.957	0.901	NS
Types of School X levels of Aca. Ach.	2	7.543	3.771	0.148	NS
3-way interactions					
Sex X types of schools X levels of Aca.Ach	2	70.516	35.258	1.384	NS
SS Between	11	1537.381	139.762	5.486	
SS Within	888	22622.148	25.475		
Total	899				

.01

Table 19

Number and Mean Scores on Concentration

	Number	Mean
Boys	530	15.33
Girls	370	15.49
Students of Anam Schools	450	15.68
Students of Independents	450	15.14
High Achievers	300	16.99
Middle Achievers	300	15.19
Low Achievers	300	14.05

Table 20

Number and Mean Scores of High, Middle and low Academic Achievers on Concentration

	High	Middle	Low
N	300	300	300
M	16.99 (a)	15.19 (b)	14.05 (c)

S Ed = 0.505

With 888 df, t value at 0.05 level = $1.96 \times 0.505 = 0.99$

0.01 level = $2.58 \times 0.505 = 1.30$

Table 20 A

Mean Differences and their Significance

a	-	b	=	16.99	-	15.19	=	1.80	0.01
a	-	c	=	16.99	-	14.05	=	2.94	0.01
b	-	c	=	15.19	-	14.05	=	1.14	0.05

Looking to the main effects, in Table 18 it is noticed that the F ratio with respect to sex is 1.004 which is not significant. This means that the boys and girls are equal as far as students ability to pay attention and concentration to academic task is concerned. Hence the hypothesis 29 is retained.

Similarly F ratio with respect to types of school is 2.819, which is also not significant. In the light of this result the null hypothesis 30 is accepted. It can be said that students studying in anami group schools and the students studying in independent schools do not differ significantly in their ability to pay attention to academic task.

The main effect of the levels of academic achievement on the students' ability to pay attention is significant beyond 0.01 level of confidence, as the value of F ratio is 25.761. On the basis of this value the null hypothesis 31 is rejected. The inter group mean differences are checked by t value, which is given in table 20 A. All the 't' values are

significant. The mean scores of high, middle and low achievers (Table 20) are 16.99, 15.19 and 14.05 respectively. Table 20 A shows that all the mean differences are significant. Hence the inferences can be drawn that high achievers are making more conscious efforts of paying attention to academic task than middle and low achievers and middle achievers are paying more attention to academic task than low achievers.

The two-way interaction between sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement are not significant. In the light of these results the hypotheses 32, 33 and 34 are retained.

The combined effect of sex, types of school and levels of academic achievement on the students ability to concentrate on academic task is not significant, therefore the null hypothesis 35 is accepted. From this it can be inferred that sex, types of school and levels of academic achievement jointly will have no effect on students' ability to pay attention and concentration on their academic task.

Here the sex and types of school have no significant role to play in students concentration to academic task.

4.7 Effects of Sex, Types of School and Levels of Academic
Achievement on Information Processing.

Table 21

A 2 X 2 X 3 Factorial Design for Information Processing

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	205.667	205.667	5.025	0.05
Types of Schools	1	1.637	1.637	0.040	NS
Levels of Aca.Ach.	2	1973.078	986.539	24.104	0.01
<u>2-way interactions</u>					
Sex X types of schools	1	73.415	73.415	1.794	NS
Sex X levels of Aca. Ach.	2	10.229	5.114	0.125	NS
Types of School X levels of Aca. Ach.	2	140.168	70.084	1.712	NS
<u>3-way interactions</u>					
Sex X types of schools X levels of Aca.Ach	2	284.782	142.391	3.479	0.05
SS Between	11	2688.090	244.372	5.971	
SS Within	888	36344.306	40.928		
Total	899				

Table 22

Number and Mean Scores on Information Processing

	Number	Mean
Boys	530	17.58
Girls	370	17.62
Students of Anami Schools	450	17.62
Students of Independent Schools	450	17.58
High Achievers	300	19.54
Middle Achievers	300	17.33
Low Achievers	300	15.93

Table 23

Number and Mean Scores of High, Middle and low Academic Achievers on Information Processing

	High	Middle	Low
N	300	300	300
M	19.54 (a)	17.33 (b)	15.93 (c)

S Ed = 0.648

With 888 df, t value at 0.05 level = $1.96 \times 0.648 = 1.27$

0.01 level = $2.58 \times 0.648 = 1.67$

Table 23 A

Mean Differences and their Significance

a	-	b	=	19.54	-	17.33	=	2.21	0.01
a	-	c	=	19.54	-	15.93	=	3.61	0.01
b	-	c	=	17.33	-	15.93	=	1.40	0.05

Table 24

Interaction between Sex, Types of School and Levels of Academic Achievement on Information processing

		<u>Anami School</u>		<u>Independent School</u>	
		Boys	Girls	Boys	Girls
High	N	90	60	89	61
	M	18.67 (a)	19.68 (b)	20.56 (c)	19.24 (d)
Middle	N	84	66	85	65
	M	16.87 (e)	17.39 (f)	17.03 (g)	18.01 (h)
Low	N	76	74	106	44
	M	16.44 (i)	16.65 (j)	15.88 (k)	14.76 (l)

S Ed = 2.62

with 888 df 't' at 0.05 level = 1.96 X 2.62 = 5.135

0.01 level = 2.58 X 2.62 = 6.759

Table 24 A

Mean Differences and their Significance

a	-	b	=	18.67	-	19.68	=	1.01	NS
a	-	c	=	18.67	-	20.56	=	1.89	NS
a	-	d	=	18.67	-	19.24	=	0.49	NS
a	-	e	=	18.67	-	16.87	=	1.80	NS
a	-	f	=	18.67	-	17.39	=	1.28	NS
a	-	g	=	18.67	-	17.03	=	1.64	NS
a	-	h	=	18.67	-	18.01	=	0.66	NS
a	-	i	=	18.67	-	16.44	=	2.23	NS
a	-	j	=	18.67	-	16.65	=	2.02	NS
a	-	k	=	18.67	-	15.88	=	2.79	NS
a	-	l	=	18.67	-	14.76	=	3.91	NS
b	-	c	=	19.68	-	20.56	=	0.88	NS
b	-	d	=	19.68	-	19.24	=	0.44	NS
b	-	e	=	19.68	-	16.87	=	2.81	NS
b	-	f	=	19.68	-	17.39	=	2.29	NS
b	-	g	=	19.68	-	17.03	=	2.65	NS
b	-	h	=	19.68	-	18.01	=	1.67	NS
b	-	i	=	19.68	-	16.44	=	3.24	NS
b	-	j	=	19.68	-	16.65	=	3.03	NS
b	-	k	=	19.68	-	15.88	=	3.80	NS
b	-	l	=	19.68	-	14.76	=	4.92	NS
c	-	d	=	20.56	-	19.24	=	1.32	NS
c	-	e	=	20.56	-	16.87	=	3.69	NS
c	-	f	=	20.56	-	17.39	=	3.17	NS
c	-	g	=	20.56	-	17.03	=	3.53	NS

c	-	h	=	20.56	-	18.01	=	2.55	NS
c	-	i	=	20.56	-	16.44	=	4.12	NS
c	-	j	=	20.56	-	16.65	=	3.91	NS
c	-	k	=	20.56	-	15.88	=	4.68	NS
c	-	l	=	20.56	-	14.76	=	5.80	0.05
d	-	e	=	19.24	-	16.87	=	2.37	NS
d	-	f	=	19.24	-	17.39	=	1.85	NS
d	-	g	=	19.24	-	17.03	=	2.21	NS
d	-	h	=	19.24	-	18.01	=	1.23	NS
d	-	i	=	19.24	-	16.44	=	2.80	NS
d	-	j	=	19.24	-	16.65	=	2.59	NS
d	-	k	=	19.24	-	15.88	=	3.36	NS
d	-	l	=	19.24	-	14.76	=	4.48	NS
e	-	f	=	16.87	-	17.39	=	0.52	NS
e	-	g	=	16.87	-	17.03	=	0.16	NS
e	-	h	=	16.87	-	18.01	=	1.14	NS
e	-	i	=	16.87	-	16.44	=	0.43	NS
e	-	j	=	16.87	-	16.65	=	0.22	NS
e	-	k	=	16.87	-	15.88	=	0.99	NS
e	-	l	=	16.87	-	14.76	=	2.11	NS
f	-	g	=	17.39	-	17.03	=	0.36	NS
f	-	h	=	17.39	-	18.01	=	0.62	NS
f	-	i	=	17.39	-	16.44	=	0.95	NS
f	-	j	=	17.39	-	16.65	=	0.74	NS
f	-	k	=	17.39	-	15.88	=	1.51	NS
f	-	l	=	17.39	-	14.76	=	2.63	NS
g	-	h	=	17.03	-	18.01	=	0.98	NS

g	-	i	=	17.03	-	16.44	=	0.59	NS
g	-	j	=	17.03	-	16.65	=	0.38	NS
g	-	k	=	17.03	-	15.88	=	1.15	NS
g	-	l	=	17.03	-	14.76	=	2.27	NS
h	-	i	=	18.01	-	16.44	=	1.57	NS
h	-	j	=	18.01	-	16.65	=	1.36	NS
h	-	k	=	18.01	-	15.88	=	2.13	NS
h	-	l	=	18.01	-	14.76	=	3.25	NS
i	-	j	=	16.44	-	16.65	=	0.21	NS
i	-	k	=	16.44	-	15.88	=	0.56	NS
i	-	l	=	16.44	-	14.76	=	1.68	NS
j	-	k	=	16.65	-	15.88	=	0.77	NS
j	-	l	=	16.65	-	14.76	=	1.89	NS
k	-	l	=	15.88	-	14.76	=	1.12	NS

Table 21 reveals that the main effect of sex on information processing is 5.025 which is significant at 0.05 level. This indicates sex discrimination in students' using mental imagery, verbal elaboration, comprehension, monitoring and reasoning. Table 22 shows the mean difference in favour of girls. This indicates that girls are using more mental imagery, verbal elaboration, comprehension, monitoring and reasoning than boys. In the light of the value of F ratio the null hypothesis H_0 concerning no effect of sex on the students' information processing is rejected. This seems to be quite obvious as girls are showing more favourable attitude, more interest in learning, high motivation, more ability in the use of time management techniques for learning.

The F value of main effect of types of school on information processing is 0.04 which is not significant. This means that there is no significant difference in the degree of using mental imagery, verbal elaboration and reasoning between students of anami group schools and students of independent schools. Thus the null hypothesis 37 namely types of school will have no effect on information processing is retained.

Further, the table reveals the significant difference in information processing among high, middle and low academic achievers, as the F ratio is 24.104 which is significant far beyond 0.01 level. Hence the null hypothesis 38, namely levels of academic achievement will have no significant effect on information processing is not accepted.

Table 23 A shows that the mean difference between high and middle achiever, high and low achievers and middle and low achievers are significant. This means that high achievers are using more mental imagery, verbal elaboration, comprehension monitoring and reasoning than middle and low achievers and middle achievers are using more mental imagery, verbal elaboration and reasoning than low achievers.

The first order interaction between sex and types of school to information processing is 1.794 which is not significant. This means that the combined effect of sex and

types of school on students information processing is not significant. In the light of this result null hypothesis 39 is accepted. The combined effect of sex and levels of academic achievement on information processing and combined effect of types of school and levels of academic achievement on students' information processing are not significant. Hence both the null hypotheses 40 and 41 are retained.

The joint effect of sex, types of school and levels of academic achievement on information processing is significant at 0.05 level. Keeping in mind this result the null hypothesis 42 namely, sex, types of school and levels of academic achievement jointly will have no significant effect on information processing is not accepted. The inter group mean differences are checked by 't' values of 5.135 at 0.05 level and 6.759 at 0.01 level. Table 24 A reveals that all the inter group mean differences except one are insignificant. The mean difference between high achieving boys from independent schools and low achieving girls from Independent schools is significant at 0.05 level. The mean difference is in favour of high achieving boys. This indicates that high achieving boys from Independent schools are using more mental imagery, reasoning, comprehension and verbal elaboration than the low achieving girls from the same group of schools.

4.8 Effects of Sex, Types of School and Levels of Academic Achievement on Selecting Main Ideas

Table 25

A 2 X 2 X 3 Factorial Design for Selecting Main Ideas

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	37.908	37.908	3.383	NS
Types of School	1	19.883	19.883	1.775	NS
Levels of Aca.Ach.	2	319.550	159.776	14.260	0.01
<u>2-way interactions</u>					
Sex X types of school	1	3.393	3.393	0.303	NS
Sex X levels of Aca.Ach.	2	11.894	5.947	0.531	NS
Types of School X levels of Aca. Ach.	2	20.281	10.141	0.905	NS
<u>3-way interactions</u>					
Sex X types of schools X levels of Aca.Ach	2	33.122	16.561	1.478	NS
SS Between	11	477.129	40.648	3.628	
SS Within	888	9949.511	11.204		
Total	899				

Table 26

Number and Mean Scores on Selecting Main Ideas

	Number	Mean
Boys	530	10.40
Girls	370	10.63
Students of Anami Schools	450	10.66
Students of Independet Schools	450	10.38
High Achievers	300	11.23
Middle Achievers	300	10.55
Low Achievers	300	9.77

Table 27

Number and Mean Scores of High, Middle and low Academic Achievers on Selecting Main Ideas

	High	Middle	Low
N	300	300	300
M	11.23 (a)	10.55 (b)	9.77 (c)

S Ed = 0.333

With 888 df, t value at 0.05 level = $1.96 \times 0.333 = 0.65$

0.01 level = $2.58 \times 0.333 = 0.85$

Table 27 A

Mean Differences and their Significance

a - b	=	11.23	-	10.55	=	0.68	0.05
a - c	=	11.25	-	9.77	=	1.46	0.01
b - c	=	10.55	-	9.77	=	0.78	0.05

From Table 25 it is observed that the main effects of sex and types of school with respect to selecting main ideas and recognising important information are not significant as the obtained F values 3.383 and 1.775 respectively are significant. This implies that boys and girls show no distinction in selecting main ideas for learning. The same can be said true for students studying in anam group schools and independent schools. In the light of the F Values the null hypotheses 43 and 44 are accepted.

F ratio with respect to levels of academic achievement is 14.260 (Table 25) which is significant beyond 0.01 level of confidence. In the light of F ratio null hypothesis 45 is not accepted. The mean scores of high, middle and low achievers are 11.23, 10.55 and 9.77 respectively. The inter group mean differences are examined keeping in mind the values of 't' at 0.05 and 0.01 levels. As seen in Table 27 A, all the mean differences are significant. This means that high achievers have more ability to select main ideas for learning than middle achievers and low achievers. Similarly middle achievers also have more ability to select main ideas for learning

than low achievers.

The joint effects of sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement on the students' ability to select main ideas for learning are not significant. In the light of these results the null hypotheses 46,47 and 48 are retained.

F ratio of second order interaction between sex, types of schools and levels of academic achievement is 1.478 which is not significant. Hence the null hypothesis 49 namely sex, types of school and levels of academic achievement jointly will have no significant effect on selecting main ideas for learning is retained.

Looking to the entries of table 25 it can be said that sex and types of school have no significant and differential role to play in selecting main ideas for learning.

4.9 Effects of Sex, Types of School and Levels of Academic Achievement on self-Testing

Table 28

A 2 X 2 X 3 Factorial Design for Self-Testing

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	34.564	34.564	0.889	NS
Types of School	1	206.150	206.150	5.302	0.05
Levels of Aca.Ach.	2	465.645	232.822	5.988	0.01
<u>2-way interactions</u>					
Sex X types of school	1	5.102	5.102	0.131	NS
Sex X levels of Aca.Ach.	2	293.429	146.715	3.773	0.05
Types of Schools X levels of Aca. Ach.	2	181.396	90.698	2.333	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	200.833	100.416	2.582	NS
SS Between	11	1341.474	121.952	3.136	
SS Within	888	34529.276	38.884		
Total	899				

Table 29

Number and Mean Scores on Self-Testing

	Number	Mean
Boys	530	17.32
Girls	370	18.28
Students of Anami Schools	450	17.83
Students of Independet Schools	470	17.70
High Achievers	300	18.73
Middle Achievers	300	17.44
Low Achievers	300	17.24

Table 30

Number and Mean Scores of High, Middle and Low Academic Achievers on Self Testing

	High	Middle	Low
N	300	300	300
M	18.73 (a)	17.44 (b)	17.24 (c)
S Ed	=	0.624	

With 888 df, t value at 0.05 level = $1.96 \times 0.624 = 1.223$

0.01 level = $2.56 \times 0.624 = 1.597$

Table 30 A
Mean Differences and their Significance

a	-	b	=	18.73	-	17.44	=	1.29	0.05
a	-	c	=	18.73	-	17.24	=	1.49	0.05
b	-	c	=	17.44	-	17.24	=	0.28	NS

Table 31

Interaction between Sex and Levels of Academic Achievement

		High	Middle	Low
Boys	N	182	169	179
	M	18.24 (a)	17.04 (b)	16.69 (c)
Girls	N	118	131	121
	M	19.22(d)	17.84 (e)	17.79 (f)

S Ed = 1.27

With 888 df 't at 0.05 level = 1.96 x 1.27 = 2.489

0.01 level = 2.58 x 1.27 = 3.276

Table 31 A

Mean Differences and their Significance

a	-	b	=	18.24	-	17.04	=	1.20	NS
a	-	c	=	18.24	-	16.69	=	1.55	NS
a	-	d	=	18.24	-	19.22	=	0.98	NS
a	-	e	=	18.24	-	17.84	=	0.40	NS
a	-	f	=	18.24	-	17.79	=	0.45	NS
b	-	c	=	17.04	-	16.69	=	0.35	NS
b	-	d	=	17.04	-	19.22	=	2.18	NS
b	-	e	=	17.04	-	17.84	=	0.85	NS
b	-	f	=	17.04	-	17.79	=	0.75	NS
c	-	d	=	16.69	-	19.22	=	2.53	0.05
c	-	e	=	16.69	-	17.84	=	1.15	NS
c	-	f	=	16.69	-	17.79	=	1.10	NS
d	-	e	=	19.22	-	17.84	=	1.38	NS
d	-	f	=	19.22	-	17.79	=	1.43	NS
e	-	f	=	17.84	-	17.79	=	0.05	NS

From Table 28 it seems that there is no sex discrimination on adopting self testing techniques for learning as the value of F of 0.889 is insignificant. In the light of this result the null hypothesis 50 regarding no significant effect on self testing strategies is retained.

Further, the F value of main effect of types of schools on adopting self testing technique is 5.302 which is significant at 0.05 level. The null hypothesis 51 is therefore re-

jected and it is inferred that the students of anam group schools and independent schools differ in adopting self testing technique for learning. The mean value of students of anam group school is 17.83 whereas the mean of students of independent schools is 17.30. This implies that students of anam group schools adopt more and better ways of self testing technique than those of independent schools.

F value of main effect of levels of academic achievement to self testing is 5.988 which is significant at 0.01 level. Hence the null hypothesis 52 namely, levels of academic achievement will have no effect on self testing, is not accepted.

Table 30 A shows that the mean difference between high and middle achievers is significant at 0.05 level, whereas the mean difference between high and low achievers is significant at 0.01 level. These differences are in favour of high achievers. Hence it is inferred that high achievers have better ways of adopting self testing techniques than middle and low achievers. The mean difference between middle and low achievers is not significant. This means that middle achievers and low achievers are not different so far as selecting self testing technique is concerned.

The first order interaction of sex and types of school is not significant with respect to self testing techniques. Hence the null hypothesis 53 namely, sex and types of school

jointly will have no significant effect on students adopting self testing technique for learning is retained. The first order interaction of sex and levels of academic achievement is significant at 0.05 level. This means that both the sex and levels of academic achievement jointly affect students' selection of self testing technique. In the light of the F value of 3.773 the null hypothesis 54 concerning no joint effect of sex and levels of academic achievement on self testing technique is rejected. The inter group means are tested with the value of 't' test at 0.05 and 0.01 levels. Table 31 A shows that mean difference between high achieving girls and low achieving boys is significant at 0.05 level in favour of high achieving girls. This implies that the high achieving girls adopt better ways of self testing technique than low achieving boys. Table 31 A further shows that the inter group mean differences of all other groups are insignificant.

Further the first order interaction between types of school and levels of academic achievement on self testing is insignificant. In the light of this result null hypothesis 55 regarding no joint effect of types of school and levels of academic achievement on students' adopting self testing techniques for learning is accepted.

The second order interaction of sex, types of school and levels of academic achievement is 2.582 which is insignificant. This implies that sex, types of school and levels of

academic achievement jointly do not influence significantly on students' adopting self testing techniques. Here the null hypothesis 56 about no joint effect of sex,types of school and levels of academic achievement on students' adopting self testing techniques is accepted.

4.10 Effects of Sex, Types of School and Levels of Academic Achievement on Study Aids

Table 32

A 2 X 2 X 3 Factorial Design for Study Aids

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	208.198	208.198	5.948	0.05
Types of School	1	4.776	4.776	0.136	NS
Levels of Aca.Ach.	2	380.832	190.416	5.440	0.01
<u>2-way interactions</u>					
Sex X types of school	1	15.435	15.435	0.441	NS
Sex X levels of Aca.Ach.	2	114.098	57.049	1.630	NS
Types of Schools X levels of Aca. Ach.	2	142.133	71.066	2.030	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach.	2	51.974	25.987	0.742	NS
SS Between	11	895.255	81.387	2.325	
SS Within	888	31080.491	335.001		
Total	899				

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Table 33
Number and Mean Scores on Study Aids

	Number	Mean
Boys	530	19.96
Girls	370	20.00
Students of Anami Schools	450	20.45
Students of Independent Schools	450	19.52
High Achievers	300	20.97
Middle Achievers	300	19.70
Low Achievers	300	19.27

Table 34
Number and Mean Scores of High, Middle and Low Academic Achievers on Study Aids

	High	Middle	Low
N	300	300	300
M	20.97 (a)	19.70 (b)	19.27 (c)

S Ed = 0.6

With 888 df, t value at 0.05 level = $1.96 \times 0.6 = 1.176$
 0.01 level = $2.56 \times 0.6 = 1.548$

Table 34 A

Mean Differences and their Significance

a	-	b	=	20.97	-	19.70	=	1.27	0.05
a	-	c	=	20.97	-	19.27	=	1.70	0.01
b	-	c	=	19.70	-	19.27	=	0.43	NS

Studying the main effects in Table 32 it is seen that there is sex discrimination in adopting and creating support techniques for learning, as the obtained F value is 5.948 which is significant beyond 0.01 level. This means that both girls and boys differ significantly in adopting support technique for learning. On the basis of this result the null hypothesis 57 is rejected. The mean scores of boys and girls are 17.25 and 18.25 (Table 33) respectively. The result shows that girls adopt and create more support techniques for learning than boys.

Further, the main effect of types of school on students' support techniques is not significant as the F value is 0.136. This means that there is no influence of types of school on adopting support techniques for learning. In light of this, null hypothesis 58 namely the types of schools will have no significant effect on adopting support technique retains.

Table 32, further reveals that levels of academic achievement has significant influence on adopting support technique of learning as the obtained value of F ratio is

5.440, which is significant at 0.01 level. Here the null hypothesis 59 concerning no effect of levels of academic achievement on the students support techniques to learn is not accepted. The mean scores of high, middle and low achiever are 20.97, 19.70 and 19.27 respectively. The inter group mean differences are examined with the help of 't' value at 0.05 and 0.01 levels. The mean differences between high and middle achievers, and high and low achievers are significant whereas the mean difference between middle and low achievers is not significant. This shows that high achievers select and adopt more and better support techniques for study than the middle and low achievers.

F ratio of the first order interaction of sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement are 0.441, 1.630 and 2.030 respectively. These F ratio are not significant. Hence the null hypotheses 60, 61 and 62 are accepted.

The second order interaction between sex, types of school and levels of academic achievement on supporting techniques for study is 0.742, which is not significant. The hypothesis 63 namely, sex, types of school and levels of academic achievement jointly will have no effect on support techniques for study, is accepted.

4.11 Effects of Sex, Types of School and Levels of Academic Achievement on Test Strategies

Table 35

A 2 X 2 X 3 Factorial Design for Test Strategies

Source of Variance	Df.	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	8.657	8.657	0.290	NS
Types of School	1	250.930	250.930	8.393	0.01
Levels of Aca.Ach.	2	1582.183	791.091	26.460	0.01
<u>2-way interactions</u>					
Sex X types of school	1	90.126	90.126	3.013	NS
Sex X levels of Aca.Ach.	2	78.539	39.269	1.313	NS
Types of Schools X levels of Aca. Ach.	2	3.718	1.859	0.062	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	21.235	10.617	0.355	NS
SS Between	11	2024.933	184.085	6.157	
SS Within	888	26548.650	29.897		
Total	899				

Table 36

Number and Mean Scores on Test Strategies

	Number	Mean
Boys	530	16.83
Girls	370	16.77
Students of Anami Schools	450	17.33
Students of Independent Schools	450	16.28
High Achievers	300	18.28
Middle Achievers	300	17.06
Low Achievers	300	15.06

Table 37

Number and Mean Scores of High, Middle and Low Academic Achievers on Test Strategies

	High	Middle	Low
N	300	300	300
M	18.28 (a)	17.06 (b)	15.06 (c)
S Ed	=	0.547	

With 888 df, t value at 0.05 level = $1.96 \times 0.547 = 1.072$

0.01 level = $2.56 \times 0.547 = 1.411$

Table 37 A

Mean Differences and their Significance

a	-	b	=	18.28	-	17.06	=	1.22	0.05
a	-	c	=	18.28	-	15.06	=	3.22	0.01
b	-	c	=	17.06	-	15.06	=	2.00	0.01

Table 35 shows that there is no sex discrimination on adopting test strategies as the obtained value of F is 0.290 which is not significant. Hence the null hypothesis 64 concerning no significant effect of sex on students' adopting Test Strategies is retained.

Further it reveals the significance difference between students of anam group schools and independent schools with respect to their adopting test strategies. The obtained Value of F is 8.393 which is significant at 0.01 level. The mean scores of students of anam group schools and independent schools are 17.33 and 16.28 respectively (Table 36). This means that the students of anam group schools adopt more and better test strategies than those of independent schools. In the light of this finding the null hypothesis 65 regarding no significant effect of types of school on students adopting test strategies is not accepted.

The F ratio with respect to levels of academic achievement is 24.460 which is significant beyond 0.01 level. The mean scores of high, middle and low achievers are 18.28, 17.06

and 15.07 respectively. Table 37 A shows that all the inter group mean differences are significant. This means the high achievers adopt more and better test strategies than middle and low achievers and middle achievers also adopt more and better test strategies than low achievers. They make more conscious efforts to be prepared for taking examination. They are conscious enough to integrate material from different sources. Keeping in the mind the value of F ratio, the null hypothesis 66 about no significant influence of levels of academic achievement on students selecting test strategies is rejected.

The two-way interaction effect of sex and types of school on test strategy is not significant. The same is true with respect to the interaction effect of sex and levels of academic achievement and types of schools and levels of academic achievement on test strategy. Keeping in mind these results the null hypotheses 67, 68 and 69 are retained.

The three-way interactions of sex, types of school and levels of academic achievement with respect to test strategy is 0.355 which is not significant. This means that interaction of sex, types of school and levels of academic achievement jointly did not have influence on the students selection of test strategies. In the light of this result the null hypothesis 70 is retained.

4.12 Effects of Sex, Types of School and Levels of Academic Achievement on Total Learning Strategies

Table 38

A 2 X 2 X 3 Factorial Design for Total learning Strategies

Source of Variance	Df	Sum of Squares	Mean Squares	F	Level of Significance
<u>Main Effects</u>					
Sex	1	4062.767	4062.767	2.935	NS
Types of School	1	9070.209	9070.209	6.553	0.05
Levels of Aca.Ach.	2	84116.262	42058.131	30.386	0.01
<u>2-way interactions</u>					
Sex X types of school	1	1164.851	1164.851	0.842	NS
Sex X levels of Aca.Ach.	2	5819.976	2909.988	2.102	NS
Types of School X levels of Aca. Ach.	2	4182.731	2091.366	1.511	NS
<u>3-way interactions</u>					
Sex X types of school X levels of Aca.Ach	2	7424.495	3712.247	2.682	NS
SS Between	11	114433.555	10403.05	7.516	
SS Within	888	1229095.627	1384.117		
Total	899				

Table 39

Number and Mean Scores on Total Learning Strategies

	Number	Mean
Boys	530	157.67
Girls	370	159.54
Students of Anami Schools	450	161.66
Students of Independent Schools	450	155.54
High Achievers	300	170.93
Middle Achievers	300	157.59
Low Achievers	300	147.29

Table 40

Number and Mean Scores of High, Middle and Low Academic Achievers on Total Learning Strategies

	High	Middle	Low
N	300	300	300
M	170.93 (a)	157.59 (b)	147.29 (c)

S Ed = 3.72

With 888 df, t value at 0.05 level = 1.96 X 3.72 = 7.291

0.01 level = 2.56 X 3.72 = 9.598

Table 40 A

Mean Differences and their Significance

a	-	b	=	170.93	-	157.59	=	13.34	0.01
a	-	c	=	170.93	-	147.29	=	23.64	0.01
b	-	c	=	157.59	-	147.29	=	10.30	0.01

The Table 38 shows main effect, two-way interaction effect and three-way interaction effect of sex, types of school and levels of academic achievement on learning strategies of students.

The obtained F value with respect to sex on learning strategies is 2.935 which is not significant. This shows that there is no significant difference between boys and girls so far as the total learning strategies is concerned. This means that boys and girls are equal in their adopting learning strategies. In the light of this result the null hypothesis H_0 , namely sex will have no significant effect on the learning strategies is accepted.

The same Table further reveals the fact that the students studying in anam group schools differ significantly from the students of independent schools with respect to their learning strategies, as the F value of 6.553 is significant beyond 0.01 level. Table 39 shows that the mean difference between the students of anam group schools and the students of independent group schools is in favour of the

students of anami group schools. This shows that students of anami group schools have better learning strategies than the students of independent schools. Here the null hypothesis 72 namely, types of school will have no significant effect on learning strategies is rejected. This might be because the main objectives of anami group schools are to provide best possible human and material resources, to prepare teachers for their effectiveness in teaching and to strengthen educational programme. These help the student individually to prepare one self for learning.

It is further seen in Table 38 that the main effect of levels of academic achievement on learning strategies is significant beyond 0.01 level of confidence. This means that high, middle and low achievers differ significantly with each other in their learning strategies. Table 39 shows that the mean scores of high, middle and low achievers are 170.93, 157.59 and 147.29 respectively. The inter group mean differences are compared with 't' values of 7.291 at 0.05 level and 9.598 at 0.01 level. All the mean differences in Table 40 A are significant beyond 0.01 level. In the light of these results the null hypothesis 73 namely, levels of academic achievement will have no effect on learning strategies is rejected and it is inferred that high achievers will have better learning strategies than the middle and low achievers. And middle achievers will have better learning strategies than low achievers. This might be because the low achievers

in the present study are those who passed with promotion in last two consecutive annual examinations.

It is also noticed in Table 38 that the first order interactions between sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement with respect to learning strategies are not significant. In the light of these results the null hypotheses 74, 75 and 76 are retained. From these result it can be inferred that interaction of sex and types of school, sex and levels of academic achievement and types of school and levels of academic achievement have no significant effect on students learning strategies.

It is further noticed in the same table that the second order interaction of sex, types of school and levels of academic achievement is not significant. In the light of this result the null hypothesis 77 is retained and it may be inferred that sex, types of school and levels of academic achievement jointly do not have any effect on students learning strategies.

4.13 Observations

The following observations are drawn on the basis of the discussion of Tables 5 to 40.

- 1) The girls are more motivated, diligent, self-disciplined and willing to work hard than boys, and also more conscious in the use of time management technique, more anxious about their school performance than boys. They use more and better mental imagery, verbal elaboration, comprehension and reasoning, adopt and create more support techniques for learning than boys.
- 2) Students from anami group schools have more favourable attitude towards study, more interest in study and are more time management conscious than the students from independent schools. They adopt more and better ways of self-testing techniques for learning. They use better test strategies and prepare for tests than the students of independent schools. They have better learning strategies than the students of independent schools.
- 3) The girls from anami group schools are more anxious about their school performance than those from independent schools.
- 4) High achievers are more motivated, diligent, self-disciplined and willing to work hard, more time conscious, more anxious about their school performance, more able to select main ideas than middle and low achievers. They pay more attention and concentration to their learning, use more mental imagery, verbal elaboration, adopt and create more support techniques to learn and

- test strategies than middle and low achievers.
- 5) High achievers have more favourable attitude towards study and they adopt better ways of self testing techniques than low achievers.
 - 6) Middle achievers have more favorable attitude towards study than low achievers .They are more anxious about their school performance and more able to select main ideas than low achievers. They make more conscious effort of paying attention to academic task,use more mental imagery,verbal elaboration,adopt and use better ways of self testing techniques and test strategies than low achievers.
 - 7) On the whole high achievers have better learning strategies than moddle and low achievers and middle achievers have better learning strategies than low achievers.
 - 8) The high achieving boys from independent schools are using more mental imagery,reasoning,comprehension and verbal elaboration then low achieving girls from the same group of schools.
 - 9) The high achieving girls select and adopt better ways of self testing techniques than the low achieving boys.

Part -II

4.14 Introduction

In this part an attempt has been made to examine the effects of mother's education, mother's occupation, father's education, father's occupation, family income, types of family, co-curricular activities and tuition classes on learning strategies. In order to examine the effects the statistical technique of analysis of variance is used. An attempt has been made to study the main effects only. Scale wise F ratio for each of the variables are presented, discussed and interpreted.

4.15 Effect of Mother's Education on Learning Strategies

Table 41

Main Effects of Mother's Education on Learning Strategies

Scale of Learning strategies	F	Levels of Significance
ATT	6.37	0.01
MOT	0.07	NS
TMT	0.47	NS
ANX	0.33	NS
CON	0.24	NS
INP	0.41	NS
SMI	0.07	NS
STA	0.12	NS
SFT	0.04	NS
TST	0.12	NS
TOTAL	4.03	0.01

Table 42

Number and Mean Scores of Students on Learning Strategies
with respect to Mother's Education

Mother's Education ———> Illiterate Primary Secondary University					
Scales of Learning Strategies					
	N =	114	224	387	175
ATT		13.88	13.77	12.82	12.02
MOT		14.10	14.02	13.84	13.43
TMT		17.90	17.72	16.26	15.80
ANX		18.28	17.93	16.46	15.78
CON		16.35	16.71	14.68	14.75
INP		20.26	18.63	16.95	15.98
SHI		11.32	11.29	9.96	10.24
STA		21.49	20.81	9.49	19.03
SFT		18.78	18.21	17.36	17.36
TST		17.48	18.38	16.02	16.09
TOTAL		169.84	167.48	153.83	150.48

Table 43

Number and Mean Scores of students on Attitude with respect to their Mother's Education

	Illiterate	Primary	Secondary	University
N =	114	224	387	175
M =	13.88 (a)	13.77 (b)	12.82 (c)	12.02 (d)
S Ed =	0.66			
with 897, 't' value at 0.05 level =	$1.96 \times 0.66 = 1.294$			
	0.01 level = $2.58 \times 0.66 = 1.703$			

Table 43 A

Mean Differences and their Significance

a	-	b	=	13.88	-	13.7	=	0.11	NS
a	-	c	=	13.88	-	12.82	=	1.06	NS
a	-	d	=	13.88	-	12.02	=	1.86	0.01
b	-	c	=	13.77	-	12.83	=	0.92	NS
b	-	d	=	13.77	-	12.02	=	1.75	0.01
c	-	d	=	12.82	-	12.02	=	0.80	NS

Table -44

Number and Mean scores of students on Total Learning strategies with Respect to Mother's Education

	Illiterate	Primary	Secondary	University
N =	114	224	387	175
M =	169.84 (a)	167.48 (b)	153.83 (c)	150.48 (d)

S Ed = 9.66

with 897 df, 't' value at 0.05 level = 1.96 X 9.66 = 18.93

0.01 level = 2.58 X 9.66 = 24.92

Table 44 A

Mean Differences and their Significance

a	-	b	=	169.84	-	167.48	=	2.36	NS
a	-	c	=	169.84	-	153.83	=	16.01	NS
a	-	d	=	169.84	-	150.48	=	19.36	0.05
b	-	c	=	167.48	-	153.83	=	13.65	NS
b	-	d	=	167.48	-	150.48	=	17.00	NS
c	-	d	=	153.83	-	150.48	=	3.35	NS

Table 41 shows F ratio of the different scales of learning process in relation to Mother's Education. It also shows F ratio of total learning strategies with respect to mother's education.

Examining the main effect of mother's education on attitude and interest it can be seen that F value is significant at 0.01 level. It means that the students whose mother's having different levels of education differ significantly in their attitude towards study. This implies that mother's education as a variable affect the attitude and interest of the students towards study. Here the null hypothesis 78 A concerning no effect of mother's education on attitude and interest is rejected.

Looking at F ratio with respect to other scales of learning strategies, it can be said that the groups based on mother's education do not differ significantly in all the scales of learning strategies. Keeping in mind these results the null hypotheses from 78 B to 78 J are accepted.

Table 41 further reveals the fact that the main effects of mother's education on total learning strategies is significant at 0.01 level. In the light of this finding the null hypothesis 78 concerning no effect of mother's education on learning strategies is not accepted.

Table 43 A shows that the difference between the students whose mother's are illiterate and the students whose mother's got university education is significant at 0.01 level. It is surprising to note the difference is in favour of

children of illiterate mother. Educated mothers might have been involved in job or social or other activities and they might not be able to pay attention to the studies of their children whereas illiterate mothers though cannot help their children in their studies directly but they might be paying attention to their children's studies by providing warm and conducive home environment. The difference between attitude of the children whose mothers have taken education upto primary level and attitude of the children whose mothers have taken higher education is significant at 0.01 level. Here also the result is surprising and is in favour of the children whose mother's got education up to primary level.

Table 44 A shows inter group mean difference with respect to the learning strategies. Inter group mean differences are in significant except in case of one that is the mean difference between learning strategies of students whose mothers are illiterate and learning strategies of students whose mothers took higher education. Here also the difference is in favour of children whose mothers are illiterate.

4.16 Effects of Father's Education on Learning Strategies

Table 45

Main Effects of Father's Education on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	7.81	0.01
MOT	0.21	NS
TMT	0.76	NS
ANX	0.39	NS
CON	0.34	NS
INP	0.39	NS
SMJ	0.07	NS
STA	0.11	NS
SFT	0.04	NS
TST	0.14	NS
TOTAL	5.03	0.01

Table 46

Number and Mean Scores of Students on Learning Strategies
with respect to Father's Education

Scales of Learning Strategies	Father's Education ———> Illiterate Primary Secondary University				
	N =	79	173	314	334
ATT		13.97	14.35	13.14	12.09
MOT		14.20	14.51	13.75	13.49
TMT		17.76	18.51	16.64	15.69
ANX		18.04	18.29	17.12	15.77
CON		16.03	17.25	15.51	14.22
INP		20.14	19.22	17.48	16.27
SMI		10.99	11.69	10.32	9.99
STA		21.30	21.07	19.95	19.14
SFT		18.66	18.64	17.59	17.23
TST		17.41	18.64	16.91	15.61
TOTAL		168.49	171.86	158.40	149.60

Table 47

Number and Mean Scores of Students on Attitude with respect to their Father's Education

	Illiterate	Primary	Secondary	University
N =	79	173	314	334
M =	13.97 (a)	14.35 (b)	13.14 (c)	12.09 (d)

S Ed = 1.05

with 897 df, 't' value at 0.05 level = 1.96 X 1.05 = 2.058

0.01 level = 2.58 X 1.05 = 2.709

Table 47 A

Mean Differences and their Significance

a	-	b	=	13.97	-	14.35	=	0.38	NS
a	-	c	=	13.97	-	13.14	=	0.83	NS
a	-	d	=	13.97	-	12.09	=	1.88	NS
b	-	c	=	14.35	-	13.14	=	1.21	NS
b	-	d	=	14.35	-	12.09	=	2.26	0.05
c	-	d	=	13.14	-	12.09	=	1.05	NS

Table 48

Number and Mean scores of students on Learning Strategies with respect to Father's Education

	Illiterate	Primary	Secondary	University
N =	79	173	314	334
M =	169.49 (a)	171.86 (b)	158.40 (c)	149.60 (d)

S Ed = 10.31

with 897 df, 't' value at 0.05 level = 1.96 X 10.31 = 20.20

0.01 level = 2.58 X 10.31 = 26.50

Table 48 A

Mean Differences and their Significance

a - b	=	169.49 - 171.86	=	2.39	NS
a - c	=	169.49 - 158.40	=	11.09	NS
a - d	=	169.49 - 149.60	=	19.89	NS
b - c	=	171.86 - 158.40	=	13.46	NS
b - d	=	171.86 - 149.60	=	22.06	0.05
c - d	=	158.40 - 149.60	=	8.80	NS

Table - 45 shows that the main effect of father's education on attitude is significant at 0.01 level. This indicates that father's education has an impact on students' attitude towards study. In the light of the value of F ratio (7.81), the null hypothesis 79 A regarding no effects of

mean difference between the total learning strategies of students whose father's total education upto primary school level and that of those whose father's total education upto higher education. Here also the mean difference is in favour of students whose fathers total education upto primary school level .It, therefore can be inferred that the students whose father studied upto primary school level adopted better learning strategies than the students whose fathers total university education.

4.17 Effects of Mother's Occupation on Learning Strategies

Table 49

Main Effects of Mother's Occupation on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	1.37	NS
MOT	0.85	NS
TMT	0.49	NS
ANX	0.11	NS
CON	0.11	NS
INP	0.12	NS
SMI	0.02	NS
STA	0.08	NS
SFT	0.06	NS
TST	0.04	NS
TOTAL	2.41	NS

Table 50

Number and Mean Scores of Students on Learning Strategies with respect to Mother's Occupation

Mother's Occupation ---	Housewife	Service	Business
Scales of Learning Strategies	N1 = 699	N2 = 125	N3 = 76
<hr/>			
ATT	12.94	13.03	13.87
MOT	13.50	14.82	15.28
TMT	16.38	17.88	18.25
ANX	16.69	17.79	17.62
CON	15.13	16.25	16.55
INP	17.27	18.77	18.68
SMI	10.42	10.52	11.39
STA	19.68	20.82	21.36
SFT	17.46	18.89	18.53
TST	16.55	17.53	18.00
TOTAL	156.04	166.30	169.53

Table 49 shows that the main effects of mother's occupation on different scales of learning strategies are not significant. The same is true with regard to total learning strategies. This means that the group based on mother's occupation are equal with respect to all the scales of learning strategies and also with respect to total learning strategies. It, therefore, can be inferred that mother's occupation

has no effect on any of the scales of learning strategies as well as total learning strategies. In the light of these results the null hypothesis H_0 and also sub null hypotheses under it i.e. H_{0A} to H_{0J} are accepted.

Table 50 reveals the mean scores of the students having different mother's occupation. The table shows that the mean differences are generally in favour of students whose mothers are involved in business. But these differences are insignificant as F ratios are not significant.

4.18 Effects of Father's Occupation on Learning Strategies

Table 51

Main Effects of Father's Occupation on Learning Strategies

Scales of Learning Process	F	Levels of Significance
ATT	0.21	NS
MDT	0.01	NS
TMT	0.08	NS
ANX	0.02	NS
CDN	0.08	NS
INP	0.01	NS
SMI	0.00	NS
STA	0.03	NS
SFT	0.01	NS
TST	0.03	NS
TOTAL	0.22	NS

Table 52

Number and Mean Scores of Students on Learning Strategies with respect to Father's Occupation

Father's Occupation-----	Service	Business
Scales of Learning Strategies	N1 = 602	N2 = 298
ATT	13.08	12.93
MOT	13.87	13.78
TMT	16.61	17.02
ANX	16.83	17.12
CON	15.19	15.85
INP	17.50	17.79
SMI	10.51	10.54
STA	19.82	20.31
SFT	17.86	17.54
TST	16.61	17.19
TOTAL	157.88	160.07

Table 51 reveals that the main effects of father's occupation on various scales of learning strategies and also on total learning strategies are not significant. This indicates that the groups based on father's occupation are equal as far as each of the scales of learning strategies and the total learning strategies are concerned.

Table 52 shows the average performance of students on different scales of learning strategies and also on the total learning strategies. The mean difference between the students whose fathers are businessmen and whose fathers are servicemen are negligible with respect to all the scales of learning strategies and the total learning strategies.

In the light of the entries in Table 51 and Table 52 the null hypothesis H_1 and sub null hypotheses under H_1 are accepted.

4.19 Effects of Family Income on Learning Strategies

Table 53

Main Effects of Family Income on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	0.00	0.01
MOT	0.30	NS
TMT	0.02	NS
ANX	0.22	NS
CON	3.83	0.01
INP	0.05	NS
SMI	0.06	NS
STA	0.04	NS
SFT	0.01	NS
TST	0.10	NS
TOTAL	3.01	0.05

Table 54

Number and Mean Scores of Students on Learning strategies with respect to Family Income

Family Income -----	Higher	Middle	Lower
Scales of Learning Strategies N =126	530	244	
ATT	11.98	12.78	14.13
MOT	17.76	13.62	13.67
TMT	16.31	16.32	16.52
ANX	16.17	16.67	17.87
CON	16.25	15.87	23.01
INP	16.56	17.25	18.87
SMI	09.73	10.43	11.13
STA	19.00	19.92	20.64
SFT	17.54	17.47	18.48
FST	16.44	16.47	17.72
TOTAL	152.78	156.00	169.27

Table 55

Number and Mean Scores of Students on Attitude with respect to Family Income

	Higher	Middle	Lower
N1 =	126	530	244
M	11.98 (a)	12.78 (b)	14.13 (c)

S Ed = 0.54

With 898 df, 't' value at 0.05 level = $1.96 \times 0.54 = 1.06$

0.01 level = $2.58 \times 0.54 = 1.39$

Table 55 A

Mean Differences and their Significance

a	-	b	=	11.98	-	12.778	=	0.80	NS
a	-	c	=	11.98	-	14.12	=	2.15	0.01
b	-	c	=	12.78	-	14.13	=	1.35	0.05

Table 56

Number and Mean scores of Students on Concentration with respect to Family Income

	Higher	Middle	Lower
N =	126	530	244
M =	16.25	15.87	23.01

S Ed = 3.10

with 898 df, 't value at 0.05 level = 1.96 X 3.10 = 6.08

0.01 level = 2.58 X 3.10 = 7.99

Table 56 A

Mean Differences and their Significance

a	-	b	=	16.25	-	15.87	=	0.38	NS
a	-	c	=	16.25	-	23.01	=	6.76	0.05
b	-	c	=	15.87	-	23.01	=	7.14	0.05

Table 57

Number and Mean scores of students on Learning Strategies with respect to Family Income

	Higher	Middle	Lower
N =	126	530	244
M =	152.78	156.00	169.27

S Ed = 7.79

with 898 df, 't' value at 0.05 level = $1.96 \times 7.79 = 15.26$

0.01 level = $2.58 \times 7.79 = 20.09$

Table 57 A

Mean Differences and their Significance

a	-	b	=	152.78	-	156.00	=	3.22	NS
a	-	c	=	152.78	-	169.27	=	16.49	0.05
b	-	c	=	156.00	-	169.27	=	13.27	NS

Table 53 shows the main effects of family income on scales of learning Strategies and on total learning strategies. It is seen in this table that F ratio with respect to attitude of the students in learning is significant at 0.01 level. This means that family income has an impact on attitude of the students. In the light of this result the null

hypothesis 82 A about no effect of family income on attitude is not accepted. Further it is noticed in the same table that F ratio with respect to concentration for study is significant. This indicates that family income influences students' concentration to study. Keeping in mind this result the null hypothesis 82 E concerning no effect of family income on concentration is not accepted. Similarly F ratio with respect to total learning strategies is also significant. Hence it can be said that family income has an impact on total learning strategies. In the light of this result the null hypothesis 82 regarding no effect of family income on total of learning strategies is not accepted. F ratios with respect to other scales are not significant. It means that the students from higher, middle and lower income groups are equal so far as motivation, time management technique, anxiety and worry about school performance, information processing, selecting main ideas, use of study aids, self testing and test strategies are concerned. Hence null hypotheses 82 B, 82 C, 82 D, 82 F, 82 G, 82 H, 82 I, 82 J are accepted.

The Table 54 shows mean scores of students from higher, middle and lower income groups on each scale of learning strategies and on total learning strategies. Table 55 A shows inter group mean differences. It is noticed in this table that the students from higher income group differs significantly from students from lower income group with respect to their attitude. The mean difference is in favour

of lower income group students. It therefore can be inferred that the students from lower income group have more favourable attitude towards study than the students from higher income group. Similarly from the same table it is inferred that the students from lower income group have more favourable attitude towards study than the students from middle income group.

Table 56 A shows that the difference between the students from lower income group and the students from middle income group with respect to concentration for study is significant at 0.05 level. Similarly the students from lower income group differ significantly from the students from higher income group with respect to concentration for study. These differences are in favour of the students from lower income group. This means that the students from lower income group pay more concentration on learning than the students from middle income group and the students from higher income group .

Table 57 A shows the inter group mean differences in total learning strategies with respect to family income. The mean difference between the students from higher income group and the students from lower income group is significant at 0.05 level. This difference is in favour of the students from lower income group. This implies that the students from lower income group have better learning strategies than the students from higher income group. It is seen in the same Table

that the students from higher income group and from middle income group are equal with respect to their learning strategies. Similarly the students from middle income group and lower income group are also equal as their mean difference in learning strategies are not significant.

4.20 Effects of Types of Family on Learning Strategies

Table 58

Main Effects of Types of Family on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	0.54	NS
MOT	0.15	NS
TMT	0.01	NS
ANX	0.00	NS
CON	0.01	NS
INP	0.04	NS
SMI	0.00	NS
STA	0.04	NS
SFT	0.00	NS
TST	0.01	NS
TOTAL	0.03	NS

Table 59

Number and Mean Scores on Learning strategies with respect to Types of Family

Types of Family	Nuclear	Joint Family
Scales of Learning Strategies	N = 747	153
ATT	13.08	12.78
MOT	13.75	14.25
TMT	16.72	16.86
ANX	16.94	16.87
CON	15.45	15.22
INP	17.49	18.10
SMI	10.54	10.43
STA	19.85	20.62
SFT	17.72	17.90
TST	16.89	16.40
TOTAL	158.43	159.44

Table 58 shows the main effects of types of family on each of the scales of learning strategies and on total learning strategies. Table 59 shows the mean scores of students staying in nuclear family and joint family. All the F ratios in Table 58 are not significant. These indicate that the types of family has no impact on scales of learning strategies as well as on total learning strategies. The students staying in nuclear families and staying in joint families are equal so

far as all the scales of learning strategies and the total learning strategies are concerned. In the light of these results the null hypothesis H₀ namely types of family will have no significant effect on learning strategies is accepted. Similarly, the null hypotheses from H₀ A to H₀ J are also accepted.

4.21 Effects of Student's Involvement in Co-curricular Activities (CCA) on Learning Strategies

Table 60

Main Effects of Student's Involvement in CCA on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	3.60	NS
MOT	0.00	NS
TMT	0.00	NS
ANX	0.18	NS
CON	0.04	NS
INF	0.03	NS
SMI	0.01	NS
STA	0.00	NS
SFT	0.01	NS
TST	0.01	NS
TOTAL	0.05	NS

Table 61

Number and Mean scores of Student's on Learning Strategies with respect to their Involvement in CCA

Scales of Learning Strategies	No Involvement in CCA N1 = 684	Involvement in CCA N2 = 216
ATT	13.20	12.78
MDT	13.87	13.81
TMT	16.77	16.66
ANX	17.14	16.24
CON	15.50	15.01
INP	17.71	17.24
SMT	10.58	10.24
STA	20.00	19.84
SFT	17.80	17.51
TST	16.92	16.45
TOTAL	159.55	155.62

Table 60 shows Scale wise F ratios regarding involvement of students in co curricular activities (CCA). Table 61 shows the mean scores of students who participate in co-curricular activities regularly and who do not participate in co-curricular activities. The F ratios in Table 61 are not significant. These indicate that students' involvement in Co-

curricular activities have no effect on their learning strategies and the students participating in CCA and not participating in CCA are equal as far as all the scales of learning strategies and the total learning strategies are concerned. In the light of these results the null hypothesis H4 regarding no effect of the students' involvement in CCA on learning strategies is accepted. Similarly the null hypotheses from H4 A to H4 J are accepted.

4.22 Effect of Tuition classes on Learning Strategies

Table 62

Main Effects of Tuition Classes on Learning Strategies

Scales of Learning Strategies	F	Levels of Significance
ATT	1.29	NS
MDT	0.37	NS
TMT	0.08	NS
ANX	0.16	NS
CON	0.10	NS
INP	0.27	NS
SMI	0.03	NS
STA	0.07	NS
SFT	0.06	NS
TST	0.04	NS
TOTAL	2.29	NS

Table 63

Number and Mean Scores on Learning Strategies with
respect to Tuition Classes

Scales of Learning Strategies	No	Yes
	N = 268	632
ATT	13.30	12.92
MDT	14.29	13.64
TMT	17.04	16.62
ANX	17.48	16.69
CON	15.94	15.18
INP	18.57	17.19
SMI	10.87	10.37
STA	20.54	19.75
SFT	18.34	17.50
TST	17.36	16.57
TOTAL	163.73	156.43

Table 62 and 63 show the results regarding Tuition classes. Table 62 shows that all the F ratios are insignificant. This indicates that the tuition classes have no effect on the different scales of learning strategies as well as on total learning strategies of the students. Table 63 shows the mean differences in favour of the students taking extra tuitions. But the differences are not significant. Hence it can be said that the students going to tuition class and not

going to tuition classes are equal with respect to the different scales of learning strategies. Similarly they are equal with respect to total learning strategies. Keeping in mind the results in table 62 and table 63 the null hypothesis 85 regarding no effect of tuition classes on learning strategies of the students are accepted. In the same way hypotheses from 85 A to 85 J are also accepted.

4.23 Observations on the basis of discussions from tables 41 to 63

- 1) The students whose mothers are illiterate have more favourable attitude towards learning and more interest in learning than the students whose mothers took education upto university level.
- 2) The students whose mothers studied upto primary levels have more favourable attitude towards learning and more interest in learning than students whose mothers took higher education.
- 3) The students whose mothers are illiterate have better learning strategies than the students whose mothers have taken higher education.
- 4) The students whose fathers studied upto primary level have better learning strategies than students whose fathers took higher education.
- 5) The students whose father studied upto primary level have more favourable attitude towards study than students whose fathers took university education.

- 6) The students from lower income group have more favourable attitude towards study than students from middle income group and higher income group.
- 7) The students from lower income group pay more attention to learning than the students from middle income group and from higher income group.
- 8) The student from lower income group have better learning strategies than the students from higher income group.

Part - III

4.24 Introduction :

As stated earlier, in order to study the influence of learning orientation on learning strategies, the co-efficient of correlation technique was used. The co-efficient of correlations between each of the scales of learning strategies and each of the scales of learning orientation are presented in Table 64.

4.25 Correlation between Learning Strategies and Learning Orientation

Table 64

Correlation between Learning Strategies and Learning Orientation

LO	PEDOL	ADOL	INJOL	APAL	INVOL	EXOL	SIGOL	TOTAL
LP								
ATT	0.15	0.04 *	0.19	0.11	0.20	0.18	0.06 **	0.1
MOT	0.19	0.13	0.18	0.16	0.23	0.19	0.08	0.8
TMT	0.20	0.10	0.24	0.14	0.26	0.25	0.08	0.5
ANX	0.19	0.05 *	0.20	0.12	0.25	0.22	0.03 *	0.2
CON	0.25	0.07 **	0.22	0.17	0.26	0.27	0.07 **	0.7
INP	0.21	0.12	0.29	0.22	0.28	0.24	0.04 *	0.4
SHI	0.15	0.10	0.23	0.20	0.25	0.22	0.05 *	0.4
SFT	0.16	0.07 **	0.18	0.11	0.22	0.16	0.04 *	0.2
STA	0.23	0.12	0.23	0.20	0.25	0.24	0.12	0.9
TST	0.19	0.06 **	0.23	0.17	0.26	0.23	0.04 *	0.3
TOTAL	0.27	0.12	0.30	0.23	0.34	0.31	0.07 **	0.7

- * Not Significant
- ** Significant at 0.05 level
- No mark Significant at 0.01 level
- LO Learning Orientation
- LS Learning Strategies

In Table 64, it is observed that personal domination orientation in learning (PEDOL) is significantly related with all the scales of learning strategies. This indicates that PEDOL influence the learning strategies. PEDOL refers to various aspects of personal development like self discipline, ability to organise one's thoughts etc. The significant relationships between PEDOL and all the scales of learning strategies indicate that the students who have higher personal development orientation have good learning strategies.

Another independent variable namely assessment domination in learning (ADOL) refers to the aspects of examination domination, that is, students just for passing, study those topics which are prescribed in the syllabus for test etc.

The correlation between ADOL and attitude of the students towards learning is positive but very low. This correlation is not significant. Similarly relationship of ADOL with anxiety of the students in learning is also very low. This might be because they study just for the sake of passing the exam. In case of other scales of learning strategies the values of correlations are significant. This indicates that ADOL influences all the scales of learning strategies except two that is anxiety and attitude towards learning. As the ADOL oriented students have selective motive of passing the examination, they are good at using other learning and study strategies.

INJOL means the students' intrinsic orientation in job and learning. INJOL indicates that the students perceive learning as a pleasurable experience and express a desire to find job or activity which would also give them intrinsic satisfaction. These students are creative and original. The correlations between INJOL and all the scales of learning strategies are significant at 0.01 level. This indicates that the students who have intrinsic orientation in learning have good learning strategies.

The correlations between Apathy in learning and each of the scales of learning strategies are significant at 0.01 level. That is, APAL is highly related to all the scales of learning strategies. This indicates that APAL influences learning strategies.

The correlations between involvement in learning (INJOL) and each of the scales of learning strategies are significant at 0.01 level. This shows that INVOL has an impact on learning strategies. This means that the students who are involved sincerely in studies adopt better ways of studying.

EXOL indicates extrinsic orientation in learning. This is also significantly related with all the scales of learning strategies as the obtained values of correlations are significant beyond 0.01 level. This shows that extrinsic orientation

in learning (EXOL) has an effect on the learning strategies of the students. As they want to have better prospects, and more gain in future they are investing their energy today in learning by adopting good better learning strategies.

Students who have significant other oriented orientation in learning (SIGOL) give importance to others. They do not have self orientation or involvement in learning. SIGOL is not significantly correlated with seven scales of learning strategies. This indicates that the students who are significantly other oriented are not interested in studies but in order to please others they study and use some time management techniques for learning and try to concentrate on studies.

The value of correlation of total learning orientation with each of the scales of learning strategies are significant. Similarly the value of correlations of composite learning strategies with each of the scales of learning orientation are also significant. The correlation between composite scores of learning strategies and that of learning orientation is also significant. In the light of these results it can be said that learning orientation has an impact on learning strategies. Hence the null hypothesis H_0 , concerning no significant relationship between learning orientation and learning strategies is not accepted.

4.26 Observations

- 1) The students who are self disciplined and are able to organised their thought have better ways of learning.
- 2) The examination oriented learners have high motivation, use better time management techniques,better ways of processing information and better testing techniques etc.
- 3) The students who are creative and have intrinsic satisfaction for learning have better ways of learning.
- 4) The students who are involved in studies,adopting good learning strategies.
- 5) The students who finds meaning in learning for better future prospects,adopts good learning strategies.
- 6) The students who study for the sake of others, that is, to please others generally can not adopt good learning strategies.
- 7) The students who have high learning orientation adopts better learning strategies.